

CLAIMS

WHAT IS CLAIMED:

1. A method, comprising:

receiving a first plurality of signals corresponding to a plurality of antennas;

determining at least one value indicative of a non-random portion of the first plurality of signals; and

modifying the first plurality of signals based upon the at least one value indicative of the non-random portion of the first plurality of signals to form a second plurality of signals.

2. The method of claim 1, wherein determining the at least one value indicative of the non-random portion of the first plurality of signals comprises generating an autocorrelation matrix based upon the first plurality of signals.

3. The method of claim 2, wherein modifying the first plurality of signals comprises:

inverting the autocorrelation matrix;

decomposing the inverted autocorrelation matrix; and

applying a linear transformation to the first plurality of signals based upon the decomposed inverted autocorrelation matrix.

4. The method of claim 1, wherein the first plurality of signals comprises a first plurality of images associated with a first ray corresponding to a first transmitter, and comprising detecting the first plurality of images using the second plurality of signals.

5. The method of claim 4, wherein detecting the first plurality of images using the second plurality of signals comprises:

summing the second plurality of signals; and

searching the summed second plurality of signals for the first plurality of images.

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6. The method of claim 4, further comprising assigning the first plurality of images to a first plurality of fingers.

7. The method of claim 6, further comprising processing one or more signals associated with the first plurality of fingers as a first finger group.

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8. The method of claim 7, wherein processing the one or more signals associated with the first plurality of fingers as the first finger group comprises processing the one or more signals associated with the first plurality of fingers assuming that propagation delay estimates associated with the first plurality of fingers are equal.

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9. The method of claim 7, wherein processing the first plurality of fingers as the first finger group comprises:

summing the one or more signals associated with the first plurality of fingers; and

tracking the summed one or more signals associated with the first plurality of fingers.

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10. An apparatus, comprising:

a signal transformer configured to:

receive a first plurality of signals corresponding to a plurality of antennas;

determine at least one value indicative of a non-random portion of the first plurality of signals; and
modify the first plurality of signals based upon the at least one value indicative of the non-random portion of the first plurality of signals to form a second plurality of signals.

11. The apparatus of claim 10, wherein the signal transformer comprises an autocorrelator configured to generate an autocorrelation matrix based upon the first plurality of signals.

12. The apparatus of claim 11, wherein the signal transformer comprises an inverter configured to invert the autocorrelation matrix.

13. The apparatus of claim 12, wherein the signal transformer comprises a decomposition unit configured to decomposed the inverted autocorrelation matrix.

14. The apparatus of claim 13, wherein the signal transformer comprises a linear transformation unit configured to apply a linear transformation to the first plurality of signals based upon the decomposed inverted autocorrelation matrix.

15. The apparatus of claim 10, further comprising at least one of a tracker, a receiver, a receiver controller, and a searcher, and wherein the signal transformer is configured to provide the second plurality of signals to at least one of the tracker, the receiver, and the searcher.

16. The apparatus of claim 15, wherein the searcher is configured to sum the second plurality of signals and searching the summed second plurality of signals for a first plurality of images.

17. The apparatus of claim 16, wherein the receiver controller is configured to assign the first plurality of images to a first plurality of fingers.

5 18. The apparatus of claim 17, wherein the tracker is configured to sum one or more signals associated with the first plurality of fingers and track the summed one or more signals associated with the first plurality of fingers.

19. A tracker, comprising:

10 means for summing one or more signals associated with a first plurality of fingers; and

means for tracking the summed one or more signals associated with the first plurality of fingers.